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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,540	01/04/2005	Hang-Duk Roh	206,815	9279
7590 Abelman Frayne & Schwab 150 East 42nd Street New York, NY 10017-5612		05/01/2007	EXAMINER OH, TAYLOR V	
			ART UNIT 1625	PAPER NUMBER
			MAIL DATE 05/01/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/520,540

Applicant(s)

ROH ET AL.

Examiner

Taylor Victor Oh

Art Unit

1625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

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The Status of Claims

Claims 1-7 are pending.

Claims 1-7 are rejected.

DETAILED ACTION

Priority

1. It is noted that the application is a 371 of PCT/KR03/00023(01/07/2003); a foreign prior document, Republic of Korea 10-2002-0044946 (07/30/02) is in the file .

Drawings

2. The drawing filed on 01/04/05 is accepted by the Examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (US 4,398,040).

Suzuki et al discloses a process of producing trimellitic acid in the following example (see col. 5 line 62 to col. 6 ,line 21):

Into the reactor were charged 350 g of pseudocumene, 900 g of acetic acid, 47 g of water, 1.60 g of cobalt acetate, 1.69 g of manganese acetate, and 2.16 g of hydrogen bromide, and reaction was carried out by injecting air under a pressure of 22.3 atm. Reaction temperature was kept at 130° C. until 1.5 moles of oxygen had been absorbed per mole of charged pseudocumene,

while the heat of oxidation reaction was removed by forced heat exchange through the reactor jacket. After 1.7 moles of oxygen had been absorbed per mole of charged pseudocumene (residual amount of pseudocumene: 10% on the basis of charged pseudocumene), reaction temperature was elevated from 130° C. to 220° C., while keeping the reaction pressure at 22.3 atm, and the reaction temperature was kept at 220° C.

At the reaction temperature of 220° C., the heat of oxidation reaction was removed by refluxing of condensate, while effecting heating through the reactor jacket to prevent heat radiation from the surface of the reaction. The same operation was conducted in Examples which follow.

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Air injection was continued at 220° C. until there was no substantial oxygen absorption, and then the reactor was cooled, and the reaction product was discharged from the reactor, and analyzed.

It was found that trimellitic acid yield on the basis of charged pseudocumene was 79.2% by mole, and by-produced methylphthalic acid was 1.8% by mole.

Furthermore, the data was displayed in the following table (see col. 6 ,lines 25-40):

TABLE 1

	Temp. °C.	Pressure P atm.	Water concentration wt. %	\bar{P}_{solv} atm.	P/\bar{P}_{solv}
At start of first stage of reaction	130	22.3	5	1.7	13.1
At end of the first stage of reaction	"	"	7.4	1.8	12.4
At start of second stage of reaction	220	"	7.4	14.9	1.5
At end of second stage of reaction	"	"	17.0	17.0	1.3

The reaction time for the first stage of reaction depends upon the preset conditions, but is usually in a range of 30 minutes to 3 hours.

(see col. 4 ,lines 52-55).

At the second stage of reaction, it is preferable to complete the reaction when there is no substantial absorption of oxygen. The reaction time depends upon the preset conditions, but is usually in a range of 30 minutes to 3 hours.

(see col. 4 ,lines 64-68).

However, the instant invention differs from the prior art in that the period for the first oxidation is from 5 to 20 mins.

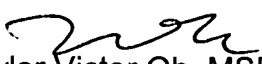
With respect to the difference in the period for the first oxidation, Suzuki et al teaches that the reaction time for the first stage of oxidation is from 30 mins to 3 hours (see col. 4 ,lines 52-55). The claimed ranges and prior art do not overlap but are close enough that one skilled artisan in the art would have expected them to have the similar reaction conditions (20 mins vs. 30 mins). Furthermore, the prior art does teach guidance that the reaction time for the first stage of oxidation depends on the preset conditions. Therefore, it would have been obvious to the skilled artisan in the art to be motivated to modify the reaction time for the first stage of oxidation by a routine experimentation in the Suzuki et al process. This is because the skilled artisan in the art would expect such a practice to be within the purview of the skilled artisan in the art due to guidance (see col. 4 ,lines 52-55) shown in the prior art .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas McKenzie can be reached on 571-272-0670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Taylor Victor Oh, MSD, LAC
Primary Examiner
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4/29/07